

The Graduate School of Science's Mathematics Seminar Series

TITLE: **THE BLACK-SCHOLES THEORY OF DERIVATIVE PRICING**



Dr. Sotheara Veng,
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Graduate School of Science, Royal University
of Phnom Penh, Cambodia.
See his publications: shorturl.at/nHZ2

Speaker: Dr. Sotheara Veng

Moderator: Dr. Kanal Hun

Date: Friday, 24 September 2021, Time: 9:00 AM-10:00 AM via Zoom

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Talk Summary:

In the early 1970's, Myron Scholes, Robert Merton, and Fisher Black made an important breakthrough in the pricing of complex financial instruments (derivative contracts) by developing a mathematical model known as the Black-Scholes model. This work won them the 1997 Nobel Prize in Economics. The aim of this talk is to review the basic objects, ideas, mathematical theories and results of the classical Black-Scholes theory of derivative pricing. More specifically, market model, Brownian motion, stochastic integral, Martingale measure, derivative contracts, risk-neutral pricing and Feynman-Kac formula will be introduced. The talk is intended for those who are interested in financial mathematics.

Short Bio.:

Dr. Sotheara Veng is a lecturer and researcher in the Graduate School of Science at Royal University of Phnom Penh (RUPP), where he has been since 2019. He received a B.S. in Mathematics and an M.S in Mathematics from the Royal University of Phnom Penh in 2010 and 2012, respectively. From 2010 to 2011 he was taking a national teacher training course (pedagogy) at the National Institute of Education (NIE) and received a teacher of higher education certificate in 2011. He received another M.S in Applied Mathematics from the University of the Philippines Diliman, Philippines in 2015. He received his Ph.D. in Mathematics from the Pusan National University, South Korea in 2018.

His research interests include option pricing problem and portfolio optimization problem, which are two main research areas in Financial Mathematics. Currently, he is working on a research project entitled "A multiscale Heston's stochastic volatility model with a stochastic interest rate" under the STEM project of RUPP. He is also advising some graduate students and teaching several courses in both undergraduate and graduate levels.